

Translation

PATENT COOPERATION TREATY

PCT/EP2003/050757



# PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference<br>62898  | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |  |
| International application No.<br>PCT/EP2003/050757  | International filing date (day/month/year)<br>27 octobre 2003 (27.10.2003)  | Priority date (day/month/year)<br>29 octobre 2002 (29.10.2002) |
| International Patent Classification (IPC) or national classification and IPC<br>G06N 5/04 |   |  |
| Applicant<br>THALES   |   |  |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

|   |  |
|---|--|
| Date of submission of the demand<br>30 mars 2004 (30.03.2004) | Date of completion of this report<br>03 December 2004 (03.12.2004) |
| Name and mailing address of the IPEA/EP                       | Authorized officer   |
| Facsimile No.   | Telephone No.  |

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/050757

## I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

- ☐ the international application as originally filed.
- ☒ the description, pages 1-64, as originally filed,  
pages \_\_\_\_\_, filed with the demand,  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the claims, Nos. 1-13, as originally filed,  
Nos. \_\_\_\_\_, as amended under Article 19,  
Nos. \_\_\_\_\_, filed with the demand,  
Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the drawings, sheets/fig 1-8, as originally filed,  
sheets/fig \_\_\_\_\_, filed with the demand,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/EP 03/50757

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

|                               |        |      |     |
|-------------------------------|--------|------|-----|
| Novelty (N)                   | Claims | 1-13 | YES |
|                               | Claims |      | NO  |
| Inventive step (IS)           | Claims |      | YES |
|                               | Claims | 1-13 | NO  |
| Industrial applicability (IA) | Claims |      | YES |
|                               | Claims | 1-13 | NO  |

### 2. Citations and explanations

#### 1. Reference is made to the following documents:

D1: US 2002/023061 A1 (DAAMS JOHANNA MARIA ET AL) 21 February 2002 (2002-02-21)

D2: Thomas Cormen et al: "Introduction à l'algorithmique" DUNOD, Paris, 1994 ISBN 2 10 00 1933 3

The above document has not been cited in the international search report. A copy of said document is attached.

#### 2. The subject matter of claims 1-13 is not patentable under PCT Article 33(3), due to a lack of inventive step.

##### 2.1. PCT Article 33(3) stipulates that an invention is considered inventive only if it cannot be derived in an obvious manner from the prior art by a person skilled in the art.

According to PCT Rule 67.1, an invention is understood to mean an approach providing a technical

solution to a technical problem. If the claimed invention relates to a subject matter or to activities that are not of a technical nature, only those aspects or features of the invention contributing to the technical nature thereof should be considered in the assessment of inventive step.

The application in question relates to a decision-making method using an expert system. According to the present application, the starting point of the claimed subject matter appears to be the use of decision trees to model the process of making a decision from a finite set of alternatives. On page 170, document D2 describes the use of a decision tree.

According to the application, the problem inherent to decision trees resides in the manner in which the inaccuracies and uncertainties in the expert knowledge and the compensatory phenomena are taken into account.

Again according to the application, there are a certain number of relatively conventional fuzzy logic methods for indirectly modelling the compensatory phenomena. The first method relates to the use of fuzzy, so-called "conjunctive" rules. The second method involves interpolating between rules.

The main drawback of the first approach involves the "combinatorial explosion", since a rule must be specified for all the possible combinations. The drawback of the second approach lies in the roundabout way in which the global compensatory rule is obtained. The consequences of interpolation may

go beyond what the expert initially wished for. The solution to all these problems resides, according to the present application, in providing to an expert a suitably reasoned opinion during a decision-making process.

- 2.2. Although the claimed system is particularly advantageous in that it asks questions in order to introduce a compensation condition within rules that are not clearly identifiable, it is nevertheless true that said method does not go beyond an intellectual activity including all the typical aspects of the non-technical fields of mathematical knowledge in relation to human activity.

Inventiveness should therefore be assessed in terms of any human activity applied to a non-technical field as per PCT Rule 39(i): only the use of the expert system in a context that provides a solution to a technical problem could confer a technical nature to the invention.

- 2.3. The problem relating to the use of decision trees, which is described in a mathematics book (D2), undoubtedly belongs to the field of mathematics. The same applies to the problems identified in the cited prior art relating to "combinatorial explosion" or to the roundabout way in which the compensatory rule is obtained. It follows that the solution residing in helping the expert to apply a direct reasoning with regard to compensation cannot be of a technical nature. The improvement provided by the claimed subject matter is therefore essentially of a mathematical nature. It cannot make up for the lack of inventive step.

3. The features of the dependent claims that have given rise to the objections mentioned in point 2 above, are either known from documents D1 and/or D2, form part of the general knowledge of a person skilled in the art, or do not make up for the lack of inventive step in view of their non-technical nature. They do not contain any feature, going beyond the prior art, that might involve an inventive step.